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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,704	08/25/2003	Kenichiro Nakamura	0505-1227P	9815

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EXAMINER
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PILKINGTON, JAMES

ART UNIT	PAPER NUMBER
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3682

NOTIFICATION DATE	DELIVERY MODE
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01/30/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,704	<b>Applicant(s)</b> NAKAMURA ET AL.	
	<b>Examiner</b> JAMES PILKINGTON	<b>Art Unit</b> 3682	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3,8-10,16-20,22-25,27 and 28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,8-10,16-20,22-25,27 and 28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Prosecution Application***

The request filed on November 16, 2007 for a Continued Examination (RCE) is accepted and a RCE has been established. An action on the RCE follows.

### ***Claim Objections***

1. Claim 17 is objected to because of the following informalities: remove lines 6-7 since they repeat line 8 of the claim. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "said planar surface" in line 10. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 16-20, 22-24, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsergas, US PGPub 2004/0031343, in view of Yeh, US PGPub 2002/0124673 (cited in first office action).

Re clms 1-3, Tsergas discloses a gear transmission device comprising:

- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)
- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)
- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose regulating means positioned between the first gear and the second fixed wall wherein the regulating means includes: a plane washer having one face positioned against a planar surface on an end face of the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, an

elastic member positioned between the cylindrical portion and the plane washer, a predetermined space formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer, wherein one face of the plane washer has a surface area at least as large as that of the end face of the second fixed wall and wherein the outer diameter of the plane washer is greater than an inner diameter of the cylindrical portion.

Yeh teaches regulating means positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3) wherein the regulating means includes: a plane washer (7) having one face positioned against a planar surface (end portion of 8) on an end face of the second fixed wall (9), a cylindrical portion (formed by groove 42) being formed on a first opposed end face of the first gear (3), an elastic member (5) positioned between the cylindrical portion (outer ring formed by groove 42) and the plane washer (7), a predetermined space (between 7 and end face of 4) formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer (upon compression), wherein the one face of the plane washer (7) has a surface area at least as large as that of the end face of the second fixed wall (the washer in Yeh is the same size as that of the fixed wall, end portion of 8, therefore the surface areas are the same) and wherein the outer diameter of the plane washer (7) is greater than an inner diameter of the cylindrical portion (outer ring formed

by groove 42) formed on the first gear (3, see Figure 3) for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide regulating means positioned between the first gear and the second fixed wall wherein the regulating means includes: a plane washer having one face positioned against a planar surface on an end face of the second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, an elastic member positioned between the cylindrical portion and the plane washer, a predetermined space formed between the cylindrical portion and the plane washer, wherein the cylindrical portion is capable of operative contact with said planar end surface of said end wall through direct contact with the plane washer, wherein one face of the plane washer has a surface area at least as large as that of the end face of the second fixed wall and wherein the outer diameter of the plane washer is greater than an inner diameter of the cylindrical portion, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

Re clm 16, Tsergas in view of Yeh discloses that the plane washer (7) is disposed in a position opposite said cylindrical portion (as disclosed by Yeh above).

Re clms 17-20 and 22, Tsergas discloses a gear transmission device comprising:

- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)
- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)
- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose regulating means comprising an elastic member positioned between said first gear and said second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, the cylindrical portion facing in a direction toward a planar surface on the end face of the second fixed wall, wherein the elastic member is surrounded by said cylindrical portion and wherein the regulating means includes a plane washer disposed in a position opposite to said cylindrical portion.

Yeh teaches regulating means comprising an elastic member (5) positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3), a cylindrical portion (outer ring formed by groove 42) being formed on a first opposed end face of the first gear (3), the cylindrical portion facing in a direction toward a planar (end portion of 8) surface of the fixed wall, wherein the elastic member (5) is surrounded by said cylindrical portion (see Figure 3) and wherein the regulating means includes a plane washer (7) disposed in a position opposite the cylindrical portion for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide regulating means comprising an elastic member positioned between said first gear and said second fixed wall, a cylindrical portion being formed on a first opposed end face of the first gear, the cylindrical portion facing in a direction toward a planar surface on the end face of the second fixed wall, wherein the elastic member is surrounded by said cylindrical portion and wherein the regulating means includes a plane washer disposed in a position opposite to said cylindrical portion, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

Re clms 23 and 24, Tsergas discloses a gear transmission device comprising:



- A pair of first (134B) and second fixed walls (111B), said first and second fixed walls opposing each other with respect to an axial direction of a first gear shaft (128)
- A first gear (122) positioned on said first gear shaft (128) between the first and second fixed walls (134B and 111B), said gear being axially movable with respect to said first and second fixed walls
- A second shaft (126) having a relatively large diameter gear (136) on a first end and a relatively smaller diameter gear (121) on a second end, with a space (see Figure 2A) separating the relatively larger diameter gear (136) and the relatively small diameter gear (121)
- Wherein said small diameter gear (121) operatively engages said first gear (122)
- A large diameter ring gear (140) operatively engaged with said first gear (122, operatively engaged via gears on shaft 126)

Tsergas does not disclose that the first gear has a cylindrical portion formed on one side thereof and regulating means comprising an elastic member positioned between said first gear and said second fixed wall.

Yeh teaches a gear (3) having a cylindrical portion (4, created by groove (42) formed on one side thereof and regulating means comprising an elastic member (5) positioned between a first gear (3) and a fixed wall (9 and end portion of 8, see Figure 3) for the purpose of providing an impact absorbing device in a gear transmission system (paragraph 0004).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas and provide a cylindrical portion formed on one side of the gear and regulating means comprising an elastic member positioned between said first gear and said second fixed wall, as taught by Yeh, for the purpose of providing an impact absorbing device in a gear transmission system.

6. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsergas '343 in view of Yeh '673 and further in view of Grant, USP 6,361,257.

Tsergas in view of Yeh discloses all of the claimed subject matter as described above.

Tsergas in view of Yeh does not disclose that the elastic member is a wave washer.

Grant teaches wave washer (10) used as an elastic member for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance (C1/L26-33).

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the teachings of Tsergas in view of Yeh and use a wave washer as the elastic member, as taught by Grant, for the purpose of providing an elastic member that has improved performance characteristics, in particular, an improved force versus deflection performance.

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsergas '343 in view of Yeh '673.

Tsergas in view of Yeh discloses all of the claimed subject matter as described above. Yeh further discloses that the end face of the fixed wall (9) is smaller than the cylindrical portion (formed by groove 43, end of 4, see Figure 2) formed on the first gear (3).

Tsergas in view of Yeh does not disclose that the one face of the plane washer is larger than the end face of the second fixed wall.

It would have been an obvious matter of design choice to make the one face of the plane washer larger than the end face of the fixed wall, since such a modification would have involved a mere change in size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

### ***Response to Arguments***

8. Applicant's arguments filed 10/16/07 have been fully considered but they are not persuasive.

The Applicant argues that because Yeh teaches that the groove 42 which makes the cylindrical portion is on the second gear 4 and not the first gear 3 it is not a valid teaching reference for the first gear having a cylindrical portion.

Yeh does indeed show "a cylindrical portion being formed on a first opposed end face of the first gear" (as claimed). The claim does not require that the cylindrical portion and the first gear be monolithic or one-piece. Because the first and second

gear of Yeh are connected together the cylindrical portion is indeed formed on a first opposed end of the face of the first gear. Furthermore, that fact that the cylindrical portion is an additional gear with a groove in Yeh does not render Yeh an invalid teaching reference. Since the claim is open ended (comprising) the cylindrical portion is not limited to a structure that does not have gear teeth. In fact a gear with an inner groove is indeed a cylindrical portion as claimed and since this "second" gear is formed on the one end of the first gear, the "cylindrical portion" is "formed on a first opposed end face of the first gear."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Pilkington whose telephone number is (571) 272-5052. The examiner can normally be reached on Monday-Friday 8:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3682

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./  
Examiner, Art Unit 3682  
1/22/08

/Richard Ridley/  
Primary Examiner, Art Unit 3682